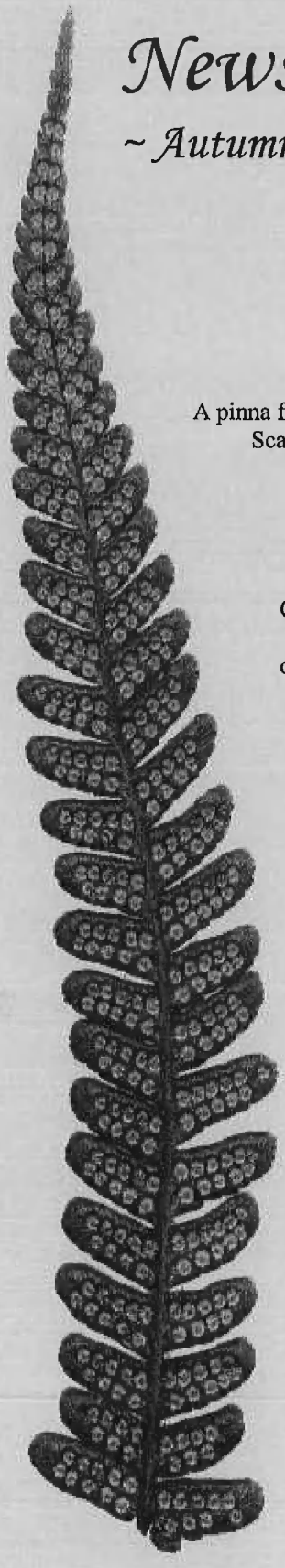
Shropshire Flora Group

Newsletter

~ Autumn 1998 ~



A pinna from the frond of a sporophyte of Scaly Male Fern, *Dryopteris affinis*, showing the arrangement of the immature sori. One sorus has ripened, on the 12th pinnule on the left

Collected on September 2nd 1998 from a cultivated fern originally from The Stiperstones.

Promiscuous Plants

A talk by Clive Stace

14th November 1998

BSBI

Shropshire Flora Group Newsletter No. 7
Autumn 1998

Contents

This newsletter is produced by the Shropshire Flora Group
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Data is managed using Recorder *Shropshire Flora*
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and maps produced by DMap for Windows v 6.3b,
kindly supplied by Dr Alan Morton.

We would like to acknowledge the generous support of the
Leighton Committee of the Shropshire Wildlife Trust,
English Nature and Epson Telford Ltd.

Flora Group News

Sarah Whild

With this newsletter all members should receive an invitation to the winter meeting where it is proposed that we formally constitute the group. Since the decision at our last winter meeting, the committee has met several times to draw up a proposed constitution and structure. We want to keep the informal and friendly atmosphere but, to mark the independence of the new group, we suggest a name change to the *Shropshire Botanical Society*. This will also reflect the fact that we are concerned with more than just the vascular plants, and that our primary aim is no longer just the preparation of a county Flora.

To become an independent group, we do need to have a formal membership list, so I am afraid the committee has decided that the subscription will henceforth be obligatory. The level has been set at £6 per annum or £15 for three years, but we shall continue to offer the current rates until the November meeting.

I hope that all members will attend the meeting or let me know their feelings about the new proposals. On behalf of the *Flora Group* I would like to thank the committee – Chris Walker, Roger Green, Sylvia Kingsbury, Alex Lockton and Ruth Dawes for the time they have put into drawing up the proposals, with the assistance of Colin Wright from the Wildlife Trust.

In February Ian Trueman stood down as the Vice-county Recorder for VC40 (Shropshire) and I was invited by the BSBI to take his place. I'm sure everyone in the new society would like to join me in thanking Ian for the work he has put in over the years, together with Pat Parker, who held the records for much of that time.

We have the pleasure of issuing an invitation to all members, and their families, to attend our inaugural meeting, which will be held at Preston Montford Field Centre on November 14th at 3 pm. Our speaker this year is **Professor Clive Stace** of Leicester University, author of the definitive *New Flora of the British Isles*, whose talk will be entitled

"Promiscuous plants... hybridization in the British Flora"

The inaugural meeting will precede this talk. Everyone listed as a member at the back of this newsletter will be entitled to speak and vote at the meeting, regardless of whether or not they have paid a subscription. The meeting will be followed by light refreshments. Tickets will be on sale for non-members who may wish to attend.

Right: my gratitude to those who have sent us records, or refereed specimens, so far this year.

This edition of the newsletter contains a tremendous number of records that have never been published before. We are obliged to publish them in some form so that the species can be counted as present in Shropshire for Clive Stace's forthcoming *Vice-comital Census Catalogue*, which will list all the species in each vice-county. My apologies for anyone who finds it a bit dull, but it has to be done – honest!

Mrs J. Armstrong
Ms C. Bennett
Mr J. Bingham
Ms G.E. Castle
Mr J. Clayfield
Mrs M. Coleman
Mr R.A. Corfield
Mrs A.P. Daly
Mr A.P. Dawes
Mrs R.A. Dawes
Mr C. Dean
Mrs M. Drury
Miss A. Dyer
Mr P. Evans
Miss M.B. Fuller
Mr P. Glanville
Mr R. Green
Mrs P. Green
Mr R. Iremonger
Mr J. James
Mrs M. Johnson
Mrs V. Jones
Miss J. Kendrew
Mr R. Knowles
Mr R.V. Lansdown
Mr M. Lawley
Mr A.J. Lockton
Mr R. Mileto
Mrs M. Morris
Mr A. Muse
Mrs P. Parker
Mrs J. Pedlow
Mr D. Pedlow
Dr T.F. Preece
Dr C.D. Preston
Mrs J. Pursaill
Mrs S. Reynolds
Mrs M.E. Roberts
Mr R.F. Shoubridge
Mr R.M. Stokes
Mr R.J. Swindells
Ms C.E. Tandy
Mr J.A. Thompson
Dr A.K. Thorne
Mr J.J. Tucker
Mr C. Walker
Mr J. Waterson
Mrs D.M.Young

Referees
Dr J. Bailey
Mr A.O. Chater
Mr C.S. Crook
Dr T. Dines
Mr A.C. Jermy
Mr R.D. Meikle
Miss A.M. Paul
Dr C.D. Preston
Prof C.A. Stace

New Records

Sarah Whild & Alex Lockton

First and Second County Records (VC 40)

Opposite Stonewort, *Chara contraria* A. Braun ex Kutz., was collected in a pool at Dolgoch Quarry (SJ277247) by Alex Lockton & Sarah Whild on 7th April 1998 and identified by N.F. Stewart. This appears to be the first county record for a Nationally Scarce species.

Tassel Hyacinth, *Muscari comosum* (L.) Miller, was seen and photographed by Sarah Whild and students on a course at Preston Montford on the 28th May 1998. It was growing on a roadside verge near the Field Centre, apparently quite well naturalised, although how it arrived there is unknown.

Caroline Tandy, of British Waterways, found a single plant of **Yellow Bartsia**, *Parentucellia viscosa* (L.) Caruel, on the bank of the Montgomery Canal at Rednal (SJ3528) in July (conf. S.J. Whild). This is only the second record in Shropshire for this plant, which was formerly recorded at Prees Heath (SJ53) by Will Prestwood and Chris Walker. It is native in damp freshwater habitats, mostly near the south coast, and is likely to be only a casual here.

Kate Thorne has added another rose to the county list with the discovery of a plant of *Rosa x toddiae* Wolley-Dod in a roadside hedge at Pulverbatch (SJ437028, 16 August 1998, det. A.L. Primavesi). This is the hybrid between *Rosa canina* and *R. micrantha*; which is rather curious, because *R. micrantha* is not known to grow in the vicinity.

There is a hybrid between Almond Willow, *Salix triandra* L., and Osier, *S. viminalis* L., which is known by the rather lengthy name ***Salix* × *mollissima* Hoffm. ex Elwert nothovar. *undulata* (Ehrh.) Wimm.** There may be one old record for it in the county, as William Leighton recorded *S. undulata* Ehrh., "**Sharp-leaved triandrous Willow**" at Meole Brace bridge (SJ41, 1841, det. William Borrer). He described it as a "large tree," which seems a curious description for what is normally a smallish shrub, 4-5m high, according to R.D. Meikle in the BSBI handbook on willows.

There are two records for it this year, both of which were along the Severn, first at Montford Bridge (SJ41, S.J. Whild & A.J. Lockton 19th June 1998 det. R.D. Meikle, **herb. SFG**) and the second at the English Bridge in Shrewsbury (SJ495123, C.D. Preston & A.J. Lockton 5th July 1998 det. R.D. Meikle, **herb. SFG**). Chris Preston suggests that it is not all that uncommon and would be worth looking out for in other places.

Butterfly Stonecrop, *Sedum spectabile* Boreau, was recorded by Ruth Dawes by the abandoned railway line in Oswestry (SJ295290) on the 10th May 1998. This garden escape has not previously been recorded in the county, although it is described by Stace (1997) as a fairly common and persistent throw-out in southern and central England.

Perhaps the strangest occurrence of the year was the appearance of **Cut-leaved Germander**, *Teucrium botrys* L., in an unmanaged stony border of Mary Fuller's garden in Aston Munslow (SO5186, conf. S.J. Whild, 2 August 1998, **herb. SFG**). This distinctive plant is a Nationally Rare (RDB 2) species, being known in just four locations in Britain, all in the south of England. It occurs in chalk grassland and, as the seeds are heavy and not easily dispersed, it does not normally occur as a casual. It must have come from another garden nearby – but is it ever a component in seeds mixes, or can this species be bought in garden centres?

Rare Plants

Jackie Pedlow found a couple of plants of **Frog Orchid**, *Coeloglossum viride* (L.) Hartman, at Llynclys Hill (SJ2724) this year. This species has been known in the vicinity for many years - having been first recorded here by Ellen Lloyd in 1929 and subsequently by several botanists, including J.H. Owen (1945), Mary Hignett (ca. 1970) and Doris Pugh (1978) - but it was thought to have died out at this site. Jackie's find shows that it is still around and, interestingly enough, it was apparently scrub clearance that allowed the plants to flourish.

The Nationally Scarce plant **Musk Stork's-bill**, *Erodium moschatum* (L.) L'Her, is not considered to be native in Shropshire (see Sinker's *Flora* or *Scarce Plants in Britain*) and, for that reason, has not been included in our *Rare Plants* project. However, the situation may not be that simple. It occurs naturally in coastal areas, where it is found in sandy, eroded soils. This year it was recorded by Sarah Whild on the 19th June in just such a habitat alongside the River Severn near Montford Bridge (SJ41), not far from the place where Edward Williams and Arthur Aikin recorded it in August 1796. If it has persisted here for 202 years, it could at least be described as well established. There are very few other records for it in the county - the only other one this century was of three plants as casuals in a sand quarry at Condover (SJ40) which were found in 1980 by Bryan Fowler.

Other interesting records

During a survey of a woodland in Telford in June Gill Castle collected some samples of a grass which turned out to be Purple Small-reed, *Calamagrostis canescens* (Wigg.) Roth (det. Sarah Whild). Gill described it as abundant in an area of Alder carr at SJ6905 - the first record of this species in the Telford area.

One of the Flora Group's most long-standing members, Mollie Coleman, reported that Bee Orchids, *Ophrys apifera* Hudson, had turned up in a small field adjacent to an industrial estate in Telford (SJ70) this year. It seems that 1998 was a good year for orchids, which have flourished at a number of locations, possibly as a result of the damp weather in the spring. Mrs Coleman's find is a new hectad for the species, which makes it a valuable addition for the forthcoming atlas.

Rob Stokes found **Sainfoin**, *Onobrychis viciifolia* Scop., at Granville Country Park in Telford, SJ7112, in May (**Herb. SFG**). It is a leguminous species that was formerly cultivated in the county, but which is not native in our region, being restricted to the south-east of Britain. Nevertheless it is still found occasionally, the last record having been in 1977 at Much Wenlock (SO69, M.E. Chadd). It is best considered a casual in Shropshire.

This is not exactly a new find, but Jane Morris has been very helpful in tracking down the site of an old record. In July 1836 William Leighton collected a specimen of a bramble "on the left hand side of the footpath leading down to the ferry" near the Can Office, Shrewsbury. The specimen was later to be accepted as the first find of "**Leighton's Bramble**" *Rubus leightonii* Lees, and is kept in Babington's herbarium at Cambridge. Being a first ever record (or lectotype) makes it particularly interesting, so it is useful to know that the grid reference would have been SJ488119. Nobody seems to know why it was called the Can (or, more usually, Cann) Office but it was at one point the office for the ferry and later an inn. The footpath is still there: it runs down to the Severn between Kingsland Bridge and the mouth of the Rea Brook.

Additions to the County Flora

The following is a list of records for species that apparently have not been recorded in Shropshire before – or, at least, not published as such. Most of these are first county records although, where a non-localised record (such as a tetrad record) is the first we have ignored it in favour of a subsequent full record, unless no such detailed record exists. To save space, the list has been printed in a small font.

Abies grandis (Douglas ex D. Don) Lindley , Giant Fir, Clunton Coppice, SO3480, John Bingham & Sarah Whild, 23/04/95
Acer palmatum Thunb., Smooth Japanese-maple, Cound Hall, SJ561053, Sarah Whild & Alex Lockton, 23/10/97
Aesculus carnea Hayne, Red Horse-chestnut, Milson Church, SO639728, John Thompson 11/09/97
Alstroemeria aurea Graham, Peruvian Lily, The Moors, Ellesmere, SJ490342, Alex Lockton, 10/07/98
Amaranthus hybridus L, Green Pigweed, Shrewsbury, SJ495122, Rob Stokes, 11/10/94
Amsinckia micrantha Suksd., Common Fiddleneck, Beach Bank, SJ42902, Kate Thorne, June 1991
Arum italicum Miller, Italian Lords-and-Ladies, Claverley, SO796944, Steve O'Donnell, 1995
Asplenium trichomanes ssp. *quadrivalens* D.E. Mayer, Maidenhair Spleenwort, Ray's Bridge, SO7183, Ian Trueman, 05/06/96
Aucuba japonica Thunb., Spotted-laurel, The Mere, Ellesmere, SJ4034, Flora Group det. Sarah Whild, 28/09/97
Avena sterilis ssp. *ludoviciana* (Durieu) Gillet & Magne., Winter Wild-oat, Hodnet, SJ6028, Sylvia Kingsbury, 30/06/91
Bergenia crassifolia (L.) Fritsch, Elephant-ears, Llynclys Hill, SJ2723, Alex Lockton, 27/04/98
Brachyglottis 'Sunshine' auct. non Hook f., Shrub Ragwort, Monkmoor Sewage Works, SJ522137, Rob Stokes, 04/10/97
Briza maxima L., Greater Quaking Grass, Copthorne, SJ480125, Rob Stokes, 28/06/94
Campanula carpatica Jacq., Shrewsbury, SJ4912, Sarah Whild, 08/12/96
Campanula persicifolia L., Peach-leaved Bellflower, Merrington Green, SJ466209, Rob Stokes, 1993
Campanula portenschlagiana Schultes, Adria Bellflower, Kingsland, Shrewsbury, SJ485121, Rob Stokes, 28/10/94
Campanula poscharskyana Degen, Trailing Bellflower, Coton Hill, SJ492136, Rob Stokes, 14/06/95
Cedrus atlantica (Endl.) Carriere, Atlas Cedar, Sidbury Churchyard, SO685857, John Thompson, 06/05/98
Cedrus deodara (Roxb. Ex D. Don) Don, Deodar, Cockshutt Churchyard, SJ435293, Pat Parker, 20/05/95
Cedrus libani A. Rich, Cedar of Lebanon, Attingham Park, SJ550102, Sarah Whild, 23/05/96
Chamaecyparis lawsoniana (A. Murray) Parl., Lawson's Cypress, Baschurch Churchyard, SJ422219, Pat Parker, 1993
x *Conyzigeron huelsenii* (Vatke) Rauschert, Shrewsbury, SJ485129, Pat Parker, 1992
Cornus sericea L., Red-osier Dogwood, Shifnal, SJ740077, Rob Stokes, 31/05/96
Corylus maxima Miller, Filbert, Shrewsbury, SJ484128, Pat Parker, 23/07/90
Crataegus x macrocarpa Hegetschw., Hybrid Hawthorn, Wistanstow, SO440868, Sarah Whild, 08/06/96
Crocosmia x crocosmiiflora (Lemoine ex Burb. & Dean) Nicholson, Montbretia, Llanymynech Heritage Area, SJ269213, Herbert Webster, 1993
x *Cupressocyparis leylandii* (A.B. Jackson & Dallimore) Dallimore, Leyland Cypress, Ludlow, SO511751, David Simpson, 1989
Cyclamen repandum Sibth. & Smith, Lydham Churchyard, SO3391, Sylvia Kingsbury, 1996
Cymbalaria hepaticifolia (Poiret) Wettst., Corsican Toadflax, Grinshill, SJ515238, Tom Preece, 1994
Cyperus longus L., Galingale, Priorslee Flash, SJ710104, Rob Stokes, 04/08/97
Dactylorhiza x transiens (Druce) Soo, Melverley Farm, SJ585408, Sarah Whild, 19/06/95
Echinochloa colona (L.) Link, Shama Millet, Shrewsbury, SJ496123, Rob Stokes, 20/08/94
Echinops sphaerocephalus L., Glandular Globe-thistle, Stokesay Castle, SO436817, John Thompson, 13/07/95
Erysimum x marshallii (Henfry) Bois, Siberian Wallflower, Whitehaven Quarry, SJ263239, Pat Parker, 09/05/93

Erythronium denscanis L., Dog's-tooth-violet, Badger Dingle, SO771994, Mrs E. O'Donnell, 1995
Euonymus latifolius (L.) Miller, Large-leaved Spindle, Badger Dingle, SO764994, Rob Stokes, 05/06/94
Euphorbia amygdaloides ssp. *amygdaloides*, Wood Spurge, Holly Coppice, SJ5414, Alex Lockton, 20/01/98
Festuca rubra ssp. *rubra*, Red Fescue, Candy Valley, SJ2528, Sarah Whild, 07/06/98
Ficus caria L., Fig, Ellesmere, SJ410341, Alex Lockton, 10/07/98
Fumaria capreolata ssp. *babingtonii* (Pugsley) Sell, White Ramping-fumitory, Trefonen, SJ260269, Franklyn Perring, 25/07/93
Fumaria officinalis ssp. *officinalis*, Common Fumitory, Aston Locks, SJ3326, Sarah Whild, 07/06/97
Geranium x oxonianum Yeo, Druce's Crane's-bill, Ruyton-XI-Towns, ca. SJ3922, John Martin, 15/07/89
Geum macrophyllum Willd., Large-leaved Avens, Bettws-y-crwyn Churchyard, SO206814, "Miss Powell", no date (ca. 1950?)
Gymnadenia conopsea ssp. *borealis* (Druce) F. Rose, Fragrant Orchid, Wyre Forest, SO717752, M. Taylor, 08/06/89
Hemerocallis fulva (L.) L., Orange Day-lily, Stokesay Castle, SO436817, John Thompson, 13/07/95
Hippophae rhamnoides L., Sea-buckthorn, Oswestry, SJ303304, Sam Barrett, Oct 1983
Hordeum distichon L., Two-rowed Barley, Montgomery Canal, SJ310249, Kathryn Edwards & Iain Gunn, 1987
Hyacinthus orientalis L., Hyacinth, Dawley, SJ696076, Rob Stokes, 14/04/97
Iberis umbellata L., Garden Candytuft, Holy Trinity Church, Wistanstow, SO432856, Philip Whittle, 03/08/86
Iris germanica L., Bearded Iris, Stokesay Castle, SO436817, John Thompson, 13/07/95
Kerria japonica (L.) DC., Kerria, Clunton Coppice, SO3480, Sarah Whild, 31/03/98
Lagarosiphon major (Ridley) Moss, Curly Waterweed, Llynclys Hill, SJ270231, Rob Stokes, 01/07/95
Lamiastrum galeobdolon ssp. *argentatum* (Smejkal) Stace, Whitcliffe Common, SO507740, Sarah Whild, 12/05/96
Lathraea clandestina L., Purple Toothwort, Hardwick Estate, SJ510222, Alan Johnson, April 1991
Lathyrus grandiflorus Smith, Two-flowered Everlasting-pea, Oakengates, SJ699104, Rob Stokes, 23/06/94
Lavatera arborea L., Tree-mallow, Old St. George's School, SJ484128, Pat Parker, 23/07/90
Lepidium latifolium L., Dittander, Craven Arms, SO437826, Will Prestwood, 1989
Leucojum aestivum L., Summer Snowflake, Whitcliffe Common, SO507740, Sarah Whild, 12/06/96
Lycopersicon esculentum Miller, Tomato, The Mere, Ellesmere, SJ4034, Flora Group conf. Sarah Whild, 28/09/97
Lysichiton americanus Hulten & H. St. John, American Skunk-cabbage, Horsehay, SJ673074, Rob Stokes, 28/04/95
Morus nigra L., Black Mulberry, Wroxeter, SJ562083, Joanna Deacon, 1990
Muscari neglectum Guss. ex Ten., Grape Hyacinth, Sambrook, SJ714244, Bryan Fowler, March 1977
Myriophyllum aquaticum (Vell. Conc.) Verdc., Parrot's Feather, Fenemere, SJ443232, Robin Walls, September 1990
Nicandra physalodes (L.) Gaertner, Apple of Peru, Yockleton, SJ3910, F. Lakes (det. Charles Sinker), 1976
Oxalis articulata Savigny, Pink-sorrel, Caynton, SJ705220, Bryan Fowler, October 1976
Oxalis exilis Cunn., Least Yellow-sorrel, Fish Street, Shrewsbury, SJ493124, Rob Stokes, 30/08/94
Oxalis incarnata L., Pale Pink-sorrel, Old St. Chad's, Shrewsbury, SJ4912, Stan Turner & Joan Connell, 03/06/76
Paeonia mascula (L.) Miller, Peony, Stokesay Castle, SO436817, John Thompson, 13/07/95
Panicum miliacium L., Common Millet, Abbey Foregate, Shrewsbury, SJ489123, A. Wake, 28/10/89
Papaver orientale L., Oriental Poppy, Shropshire, SO38I, Sylvia Kingsbury, 1996
Petasites albus (L.) Gaertner, White Butterbur, Badger Dingle, SO765993, Steve O'Donnell, 1995
Phacelia tanacetifolia Benth., Phacelia, opposite Grafton School, SJ436184, anon., 1980
Philadelphus coronarius L., Mock Orange, Cound Hall, SJ563052, Sarah Whild, 23/10/97
Phytolacca acinosa Roxb., Indian Pokeweed, Kingsland Bridge, Shrewsbury, SJ488120, Rob Stokes, 07/10/94
Pinus nigra ssp. *laricio* Maire, Corsican Pine, Pontesford Hill, SJ4005, Sarah Whild, 24/05/98
Pinus nigra ssp. *nigra* Arnold, Austrian Pine, Moreton Corbet Castle, SJ562232, John Thompson, 10/07/95
Pinus strobus L., Weymouth Pine, Sidbury Church, SO685857, John Thompson, 06/05/98
Plantago major ssp. *major*, Greater Plantain, Llynclys Hill, SJ2723, Alex Lockton, 30/08/98
Platanus x hispanica Miller & Muenchh., London Plane, Alberbury, SJ3514, Sarah Whild, 07/04/96
Populus candicans Aiton, Balm-of-Gilead, Shropshire, SO38D, Sylvia Kingsbury, 1994
Potentilla fruticosa L., Shrubby Cinquefoil, Eaton upon Tern, SJ653233, Rachael Lees, 23/07/77
Prunus x fruticans Weihe, Colemere, SJ43G, Pat Parker, 21/10/96
Prunus dulcis (Miller) D. Webb, Almond, Church Pulverbatch Churchyard, SJ429029, John Thompson, 05/06/98
Prunus lusitanica L., Portugal Laurel, Beck's Field, Shrewsbury, SJ484124, Pat Parker, 09/09/85
Pseudosasa japonica (Siebold & Zucc. ex Steudel), Arrow Bamboo, Coalport, SJ700022, Rob Stokes, 07/10/96
Quercus rubra L., Red Oak, Chetwynd Heath, SJ712222, Rob Stokes, 19/06/96
Rhus typhina L., Stag's-horn Sumach, River Roden, SJ589142, Alex Lockton, 31/07/95
Rumex x abortivus Ruhmer, Newton on the hill, SJ42W, Franklyn Perring, 1975
Sambucus racemosa L., Red-berried Elder, Shropshire, SJ60S, John Box, 1991-'93
Sanguisorba minor ssp. *muricata* (Gremli) Briq., Fodder Burnet, Rudge, SO803978, Rob Stokes, 03/06/96
Saxifraga cymbalaria L., Celandine Saxifrage, Kinnerley, SJ345214, Charles Sinker, 1970
Senecio x subnebrodensis Simonkai, Oswestry Railway Station, SJ295299, Franklyn Perring, August 1988
Sequoiadendron giganteum (Lindley) Buchholz, Wellingtonia, The Mere, SJ4034, Flora Group conf. Sarah Whild, 28/09/97
Sisyrhinchium bermudiana L., Blue-eyed-grass, Llynclys, SJ268214, Herbert Webster, 1992
Solanum tuberosum L., Potato, Old River Bed, Shrewsbury, SJ496151, Gill Castle & Rob Mileto, August 1992
Sorbus intermedia (Ehrh.) Pers., Swedish Whitebeam, Llynclys Hill, SJ272240, Jackie Pedlow det. P.J.M. Nethercott, 1990
Stachys byzantina K. Koch, Lamb's-ear, Pant Coalyard, SJ276221, Julie Clarke & Audrey Franks, 21/05/93
Thalictrum aquilegiifolium L., French Meadow-rue, Little Dawley, SJ682059, Sarah Whild, 15/06/98
Thuja plicata Donn ex D. Don, Western Red-cedar, St. Leonard's Churchyard, Ludlow, SO511751, David Simpson, June 1989
Tilia x euchlora K. Koch, Caucasian Lime, Hodnet, SJ6028, Philip & Sylvia Kingsbury, 30/06/91
Typha x glauca Godron, Hybrid Reedmace, top pool, Badger Dingle, SO771993, Rob Stokes, 07/08/96
Veronica serpyllifolia ssp. *serpyllifolia*, Thyme-leaved Speedwell, Hogstowe Meadows, SJ362009, Daniel Wrench, 26/05/94
Viburnum lantana L., Wayfaring-tree, Montgomery Canal, SJ351282, Sarah Whild, 29/09/97
Viburnum rhytidiophyllum Hemsley ex Forbes & Hemsley, Wrinkled Viburnum, Cound Hall, SJ563052, Sarah Whild, 23/10/97
Vicia faba L., Broad Bean, Llanymynech Rocks, SJ2621, Alex Lockton, 13/04/98
Vicia sativa ssp. *segetalis*, Tong Park Farm, SJ8006, Ian Trueman, 29/05/95
Vulpia muralis (Kunth) Nees, Whitchurch, SJ531415, Jean Hooson & Franklyn Perring (det. R.M. Payne & T.B. Ryves), 1997
Weigela florida (Bunge) A. DC., Weigelia, Whitton Churchyard, SO576728, John Thompson, 16/06/97
Zea mays L., Maize, Banks of River Roden, SJ463315, Alex Lockton, 11/10/95

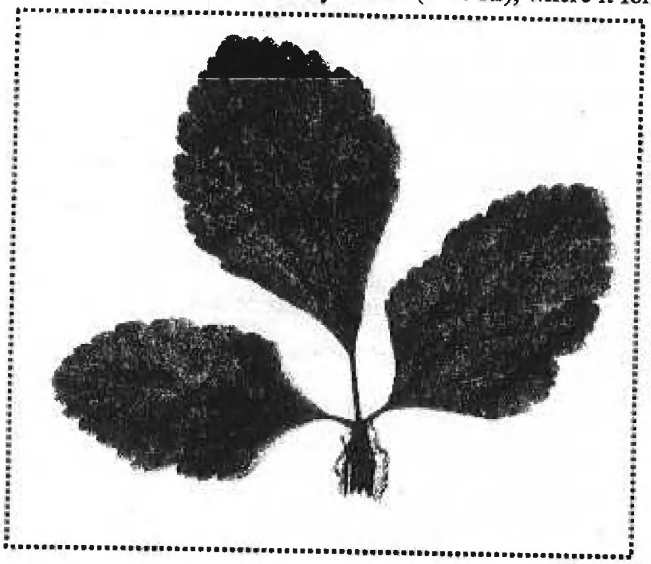
Smyrnium olusatrum, Alexanders, in Shropshire and the rust, *Puccinia smyrnii*

Dr T.F. Preece

If Alexanders is not considered to be a rare plant in Shropshire because it is an "introduction" (Sinker, 1985) it certainly has an interesting, strange distribution here, and is one of our most striking plants, with its early dramatically glossy foliage in the spring and lovely yellow umbels atop tall plants later in the year.

An alien - but long established at a few sites - probably for hundreds of years here. Found along coasts everywhere, *inland* sites have a very peculiar interest. It may have originated in Smyrnia (Alexandria) but it is now one of the most interesting botanical sights, e.g. along the North Wales coast - never far from the seaside in the British Isles.

In Shropshire, for many years it was only properly recorded from two sites - the amazing area around Laura's Tower at Shrewsbury Castle (SJ4912), where it forms almost continuous cover today. The other is at Ludlow Castle (SO5174), both being in Leighton's 1841 *Flora*. The late Doris Pugh, who lived at Pant near Oswestry, knew of a third site but it was lost (Sinker, 1985).



Left: a leaf of Alexanders infected with *Puccinia smyrnii*.

When we came back to Shropshire in 1989 I found a large patch of it in a corner adjoining my garden at Llynclys (SJ2724). Later, plants were found (possibly originating from the plants observed by Doris Pugh) in the grounds of a new house built in Pant. During the last decade neighbours have planted out Alexanders along the field side of their gardens in Turner's Lane, Llynclys, where it is rapidly increasing.

Because of my interest in the somewhat unusual rust (*Uredinales*) on this plant over the last 10 years an intensive search has continued for Alexanders at sites throughout Shropshire. A single plant was found at Merrington Green (SJ4620) on the roadside in 1993; another single plant in the grounds of Dudmaston (SO7488) in 1997. A cautionary tale can be told about the roadside in Knockin (SJ3322). A verge with almost continuous Alexanders there in 1995 was thought by locals to originate from "sowing" of wild plants in the 1950s (the same person who sowed wild flowers near the Jodrell Bank telescope at Knockin). Very little is left of this stand now because of the construction of a new Doctor's Surgery there two years ago!

Attempts to find the site in Bridgnorth (SO79) cited by Leighton have failed.

It is very probable that the Shrewsbury Castle and Ludlow Castle stands are remainders of Middle Ages plantings. It is tempting to associate Llynclys records with the activities of Romans - there are so many records in Britain of them using the plant, as we would use celery today (the Romans were very active here mining for several elements). The isolated single plants at Merrington Green and Dudmaston cannot be explained away like this. One development which will perhaps interest readers is that Alexanders is for sale as a herb in at least one place (Pentre) in Shropshire and people may be planting it in gardens now, and it may well escape from these sites.

Records of Alexanders in Shropshire			
1770	Ludlow Castle	Richard Hill Waring	"Only in the two inner courts."
1800	Bridgnorth	Edward Williams	"As you descend the steps from the High to the Low Town."
1841	Ludlow Castle	William Leighton	"Under the walls of Ludlow Castle."
1841	Shrewsbury Castle	William Leighton	"Shrewsbury Castle Mount."
1880	Ludlow Castle	William Beckwith	
1960	Shrewsbury Castle	Edward Rutter	"Riverside close to the railway bridge below Laura Tower."
1964	Pant	Doris Pugh	"On rocky ground"
1967	Shrewsbury Castle	Stan Turner	
1978	Pant	Doris Pugh	"On cliff in shady dell at Homestead for 60 years. Also at Bank House
1979	Woodside, Telford	Mountford & Carleton	Railway cutting at SJ670050
1988	Merrington Green	A. Pilsbury	"Hedgerow opposite Merrington Green car park."
1991	Llynclys	Tom Preece	
1992	Knockin	Tom Preece	"Possibly planted"
1994	Preston Gubbals	Tom Preece	
1994	Merrington Green	Pat Parker	"On north verge of lane [on] edge of Reserve."
1994	Ludlow Castle	Pat Parker	"One clump beside Castle Walk."
1996	Norton	Rob Stokes	"South verge of A5 at SJ564095."
1997	Dudmaston	Tom Preece	"One plant at SO7489" - still there in 1998"

The rust *Puccinia smyrnii* Biv.-Bernh is a dramatic sight on the plant in spring. Whilst it occurs at Shrewsbury, Llynclys and Knockin it has not been found at Ludlow (after repeated visits) or elsewhere. Because of the remarkable isolation of the Shropshire sites, examination of the DNA fingerprints of the plant stands, and on their rusts, has recently been done by a PhD student at University College, Bangor. The results indicate some variation in the genotypes of the plant stands, with much more variability in the rusts.

It would be interesting to note any further records of this plant, and also to see whether it has gall-forming and distorting yellow rust at any other sites in Shropshire. The only known plant in Montgomeryshire (Trueman *et. al.*, 1995) has now disappeared, probably due to grass verge mowing.

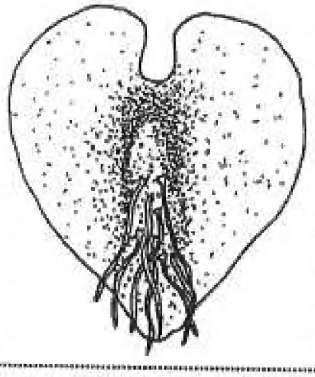
Growing ferns from spores

Tim Dickinson

"Propagation by spores is the most interesting of all means of increasing the stock of plants, and it is very wonderful from first to last" - Birkenhead, 1920.

Growing ferns from spores is remarkably easy. The only really important thing to remember to do is to sterilise the soil prior to sowing. Broad Buckler-fern, *Dryopteris dilatata*, Male Ferns, *D. filix-mas* & *D. affinis*, and Lady Fern, *Athyrium filix-femina*, will grow with even the most scant of tending. Believe me this is easy. It is also astounding!

Fig 1: a gametophyte



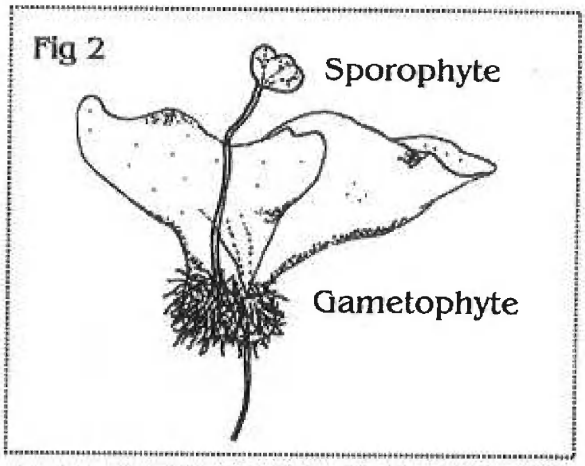
The fern life cycle

The life cycle of ferns was first elucidated in the West Indies by a surgeon called John Lindsay in 1794 (Ford 1991). The plants show alternation of generations. The familiar fern shaped things we see and struggle to identify in the field is the sporophyte. A sporophyte (Fig 3) produces spores; the spores germinate to form a threadlike gametophyte which initially looks like green fuzz, without high power magnification. The gametophyte grows to be a small (maximum of 1 cm diameter), prostrate, heart-shaped and almost translucent plant. You can find gametophytes in the field once you know what to look for. Well decayed logs are good places to search. The mature gametophytes (Fig 1) produce male and female sex cells. These fuse to form a further sporophyte, which grows from the

underside of the gametophyte. Thus the sporophyte is initially dependent on the gametophyte (Fig 2).

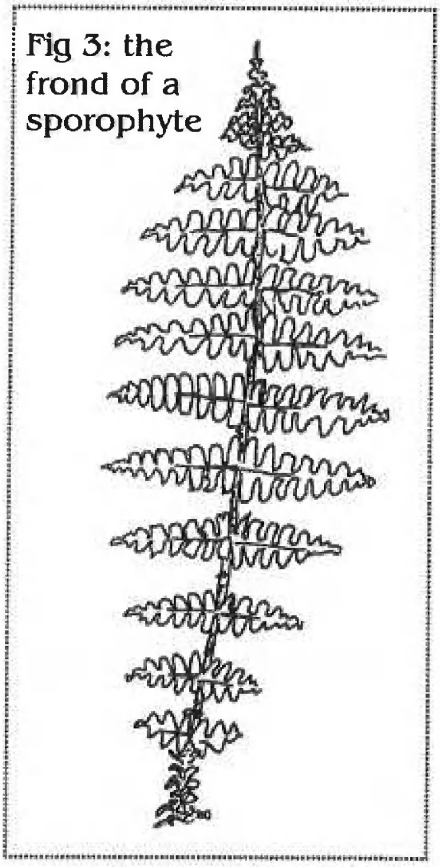
The structures on sporophytes that produce the spores show a bewildering variation in design. In most of the British ferns spores are produced on the backs of fronds in discrete collections of structures called sori. Anybody who has ever tried to identify a fern in the field will no doubt be familiar with these! The sori are composed of a myriad of tiny structures called sporangia, and it is in these that the spores are produced. Frequently a thin flap of tissue, the indusium covers the sporangia.

When the spores are ripe the indusium dries and is pushed up and the sporangia are then open to the air. The mechanism that releases the spores from the sporangia is rather dramatic and worth reading up on, or better still observing with a good x10 lens.



Collecting spores

Firstly a legal point. You must have permission from the landowner when collecting spores in the wild. Spores should be collected only when ripe. This is conveniently signified by a change in appearance of the sporangia. Any indusium will lift, hinge, shrivel or otherwise open. The sporangia will change colour, from green to various shades of yellow, brown or black. This is the time to collect the spores. The table gives the sporing times of some of the more common native ferns and the appearance of the sporangia when ripe. Any of the standard fern identification books will tell you what colour to look for in other species. Pinching off a small section of fertile frond and placing your booty in a spore proof packet is the best way of collecting spores. Don't forget to label the packet with the species name. Envelopes make quite reasonable spore-proof packets. The variety that open on the shortest side are best and should be folded to make a seam once closed. The packets should be stored in a warm dry place for a few days then inspected. If you have chosen your pinna wisely a fine dust of spores will have accumulated at the bottom of your packet. If no spores appear to have collected try flicking the packet. This may dislodge spores resting on the fern fragment. If flicking brings no joy then reseal the packet and leave for a few more days.



Some texts recommend taking home an entire frond and leaving it to shed its spores onto a sheet of newspaper. This is wasteful. A single large frond of Scaly Male Fern, *Dryopteris affinis*, may produce well in excess of 1,000,000 spores and it is not unusual for 90% of them to germinate. It can also be rather messy and inconvenient. A single pinna of any of the bigger ferns is more than adequate. With the Spleenworts, *Asplenium* spp., half a frond will be enough. Spores collected in this way and stored in dry conditions can be viable for years but for best results should be sown as soon as possible after collecting.

Table: Requirements for cultivating some common species. The appearance of the mature spores, together with the best time to find them, the properties of the growing medium and the maximum light levels under which they will thrive.

Species	Sporing	Spores	Growing medium	light
Black Spleenwort	July – Oct	Brown-black	light, sandy soil	indirect light
Wall-rue	June – Aug	Brown-black	lime-rich	full sunlight
Maidenhair Spleenwort	Sept – Oct	Brown-black	lime-rich, free-draining, humid	full sunlight
Lady Fern	July – Dec	Dark brown	lime free, moist	full sunlight
Hard Fern	Aug – Nov	Dark brown	acidic, moist	partial shade
Rustyback	Aug – Nov	Brown-black	lime-rich, v. free-draining	full sunlight
Parsley Fern	July – Aug	Yellow-orange	acidic, free-draining	full sunlight
Male Fern	Aug – Nov	Black	slightly acidic, free-draining	shade
Scaly Male Fern	Aug – Sep	Black	humus-rich, acidic	shade
Broad Buckler-fern	July – Nov	Black	humus-rich, acidic, moist	shade
Lemon-scented Fern	Aug – Sep	Brown	acidic, moist	indirect light
Royal Fern	June – July	Green	wet, acid, peaty	indirect light
Hart's-tongue	Aug – Feb	brown-black	lime-rich, moist	shade
Common Polypody	July – Mar	yellow-orange	slightly acidic, free-draining, moist	indirect light
Intermediate Polypody	Sep – Feb	yellow-orange	slightly acidic, free-draining, moist	indirect light
Soft Shield-fern	July – Jan	brown-black	lime-rich, moist	partial shade
Hard Shield-fern	July – Feb	brown-black	some lime, free-draining	partial shade

Sowing spores

Sow the spores thinly onto the surface of rather damp soil. There are a few important points to keep in mind when sowing spores:

1. You must sterilise the growing medium or you will have problems of competition from algae and mosses. This can be done with boiling water or in a microwave. If you use a microwave you need to be really sure there are no stones in the soil as they may explode in your microwave. The growth medium should be fitted to the needs of the species.
2. For all species you need to maintain reasonably high humidity. This is best done by sowing into 5 cm pots and then sealing in plastic bags.
3. Don't sow the spores too thickly. If you do the gametophytes that develop will be slower to grow and will only develop male sex cells.
4. Most species need good but not direct light. I have killed gametophytes with cold, flooding and drought but not with heat (yet!). They grow much faster in the warm (15° C).
5. In the unlikely event that you get no results from a pot, do not throw it out! There is increasing evidence that like seeds, fern spores have dormancy mechanisms (Sheffield, 1996). Unfortunately almost nothing is known about the extent or nature of these. I have found growth starting in pots 8 months after sowing. Your best bet is to experiment. Move the pots to a different aspect, add more water, let them dry out, just have fun finding out.
6. If you fancy having a go at propagating some exotic fern you have in your house a good guiding rule is that spores should be sown into a slightly damper version of the environment that the parent plant has done so well in.

What will happen next?

The spores will start to germinate within a week. Within 3 weeks the surface of the growing medium will be covered in a green fuzz and look for all the world like a rather small billiards table. From this fuzz the characteristic heart shaped gametophytes will slowly emerge. Depending on the species, time of year and growing temperature, tiny sporophytes will appear within about one year. Some slow-growing species may take two years to produce sporophytes. I have found that the best survival at potting on is achieved if you wait for the sporophytes to be about 3-4 cm high. If you wait any longer the sporophytes in your sowing pot will compete with each other and self-thin. Any sooner and the plants are too fragile to survive handling and root disturbance. If anybody reading this has any good ideas on transplanting gametophytes I would like to hear them...

Your fern should be identifiable within a year and a half or so. Do not be surprised if you find strangers in your carefully labelled pots. Spores are minute and very readily transferred from one pot to another during sowing.

Further reading and references

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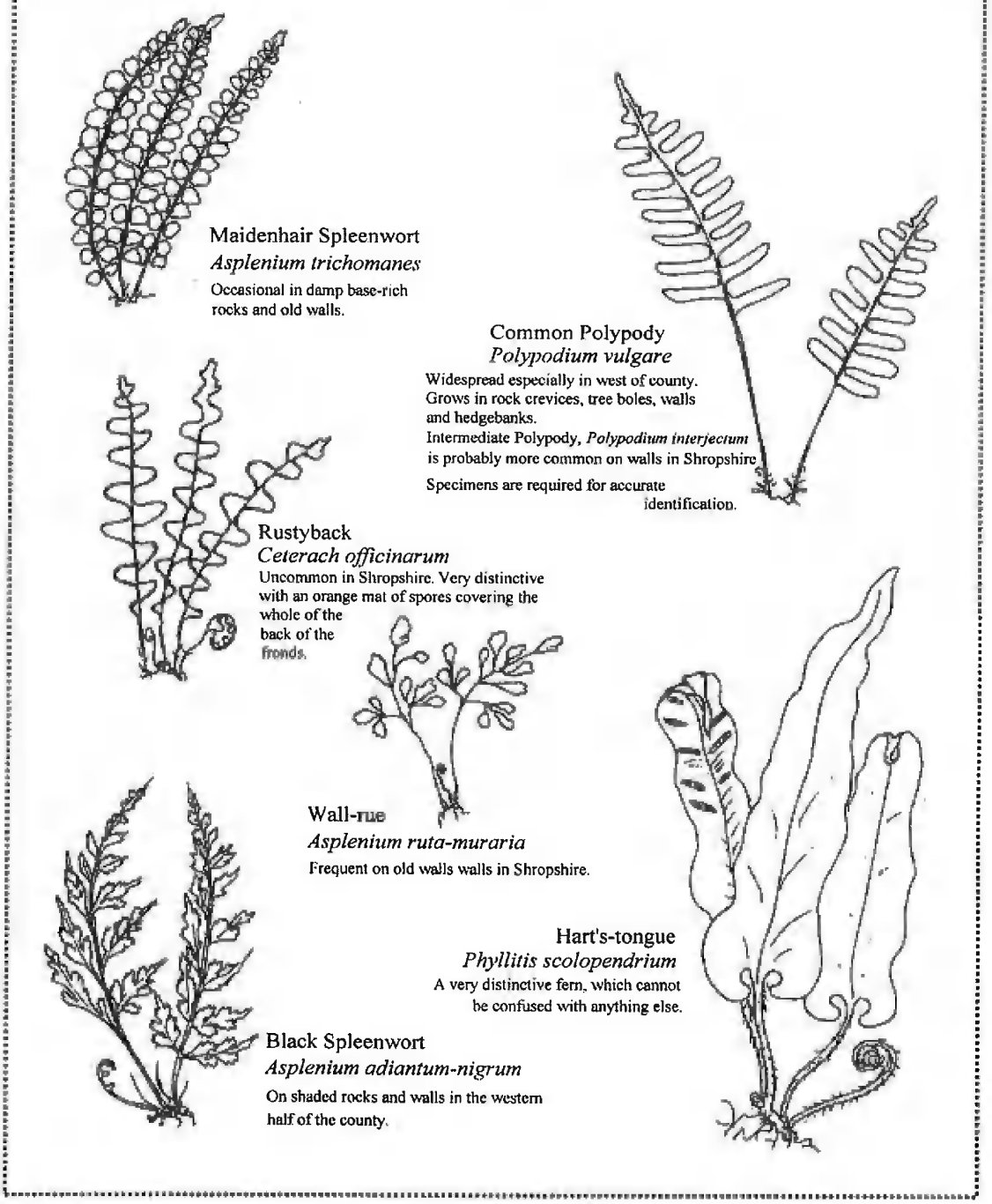
Ferns to find on walls

Sarah Whild



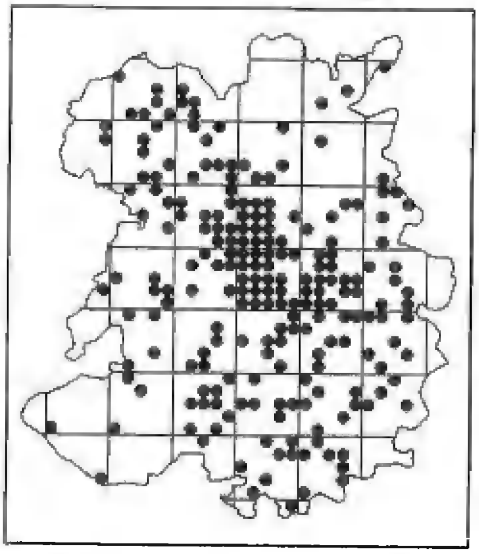
Botanical Recording in Shropshire

Sarah Whild & Alex Lockton

Until the close of the 18th century most of the botanical records for Shropshire are occasional significant finds, often made by apothecaries and medical doctors such as George Bowles (1604-1672), John Ray (1628-1707), and William Withering (1741-1799), and published in journals and books with a national coverage. It was not until about 1790 that anyone appears to have attempted any systematic recording of the county. The Rev. Edward Williams (1762-1833), minister of Battlefield and Uffington, was the first to do this. Williams was a remarkable scholar and historian who also made drawings of many of the churches of the county, which can been seen in Shrewsbury Library. The fate of his manuscript flora, which Leighton described as listing 715 species of flowering plants, is unknown. We have managed to glean some 819 of his records, largely from Leighton's 1841 *Flora* and William Phillips's 1877 *Filices* etc., but these relate to just 288 taxa, so more than half of his records are now lost.

Nevertheless his studies form the baseline data on which the study of Shropshire flora and vegetation is based. It is fortunate, therefore, that he was a skilled and diligent botanist, whose observations are mostly accurate and reliable. He is credited with the first British records of several species, including Red Pondweed, *Potamogeton alpinus*, and Six-stamened Waterwort, *Elatine hexandra*. His speciality was water plants, which is especially valuable because of the dramatic decline in wetlands since then. One thing Williams has often been praised for is the detail of his records. His observation of Monk's-hood, *Aconitum napellus*, for example, reads: "by the side of the brook a few yards above Gossart bridge between Ludlow and Burford, in abundance." What more could one ask for?

The only real failing that Williams had as a recorder is the fact that he never published his Flora. The reason for this is unknown, but possibly had something to do with the cost of such a venture at that time, and the lack of any likely return. It was to be another 30 years before the Botanical Society of London, the forerunner of the BSBI, was founded, so there was no established market for county Floras at that time.



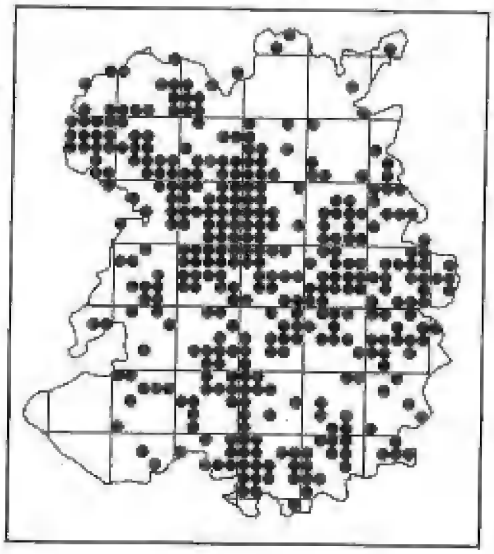
Left: a distribution map showing the 819 known records of Edward Williams's in Shropshire (VC40), demonstrating a remarkably wide coverage of the county. He is reputed to have identified 729 species of vascular plant in total. The map shows that he recorded in at least 211 tetrads.

The next serious effort to study Shropshire's botany was undertaken by William Allport Leighton (1805-1889). Because it is largely through his *Flora* of 1841 that we know of Williams's records, it is tempting to lump the two together, as was done in Sinker's *Flora*, for example. But the two were not contemporary: Williams died the year Leighton returned from Cambridge to start his work on the county's flora, and the two apparently never met.

Leighton was not so restricted by financial means. He "postponed" his ordination for ten years for the preparation of his *Flora*, during which time he recruited a recording group not unlike our modern equivalent. Edward Elsmere, a farmer from Astley, evidently brought him many specimens for verification and Thomas Bodenham of Shrewsbury was the local secretary of the Botanical Society of London. The recent advent of the Penny Post had enabled botanists to correspond by sending each other herbarium sheets from which to build up personal collections - some of which in later years grew to extravagant proportions. These often fulfilled the role that is currently met by identification guides but, by a curious irony, the most modern identification guides such as Page's *Ferns of Britain and Ireland* and the recent BSBI Handbook on Dandelions, with their photocopied specimens, now resemble herbarium collections more than the illustrated guides of the last hundred years. This is not the only example of cyclical fashions in botany.

We know very little about the preparation of Leighton's *Flora*. There is only a brief introductory chapter on methods, recorders, history and the other background information that is now considered essential to such publications. That things were not so very different in those days is revealed in the preface, though, as Leighton comments that "fame and pecuniary profit can scarcely be expected, nor are they looked for in the present instance." And goes on to remark that the study of nature is "a constant resource against the empty haughtiness, the biting sarcasms, or the trickful chicanery of the world and its votaries." It is difficult to imagine what the political and social scene in Shrewsbury would have been like in those days, but Leighton's project would surely have been the subject of considerable interest in intellectual circles.

A Flora of Shropshire follows Williams's methods exactly. Each record is given a location, often by reference to a nearby village or – more often – country house. In general Leighton's localities are more concisely given, but it is usually possible to find the spot on a map to within one kilometre or so. Dates are almost entirely absent, which is a shame, because his various contributors spanned quite a period of time. But in every case a recorder's name is given, which is invaluable in helping to assess the quality of the record and the approximate date. Indeed it is quite apparent that Leighton did not entirely believe every record he listed, marking as he did the confirmed ones with a "mark of admiration" (!).



Right: the coverage achieved by Leighton in his 1841 *Flora*, excluding Williams's records. Note particularly the extra records from the Ludlow area (SO57) mostly sent in by Mary McGhie and Henry Spare, and those from the vicinity of Oswestry (SJ22), where Thomas Salwey and John Dovaston were contributors. The map summarises 3,854 records and brings the total number of species to 862 in 360 tetrads.

Even now, 150 years later, Leighton's *Flora* is a work of considerable interest and relevance. His descriptions and illustrations are useful and many of the plants he describes are still to be found in the same locations. Because there are nearly always sites given with each record, it is possible to analyse the data to study the changes in the vegetation and management of those sites.

It is perhaps inevitable that the production of a major county Flora is followed by a period of relative inactivity. Leighton himself moved on to the study of lichens, and became a national authority in the subject. It was not really until the 1880s that there was a renewal of interest in the recording of vascular plants. William Beckwith (1844-1892) was primarily an ornithologist, but he began publishing "notes on Shropshire plants" in the Journal of Botany in 1881. There was soon a serious revival in botany in the county, and the amalgamation of the Caradoc and the Severn Valley Field Clubs led to the production of a series of annual reports that lasted more than 80 years and form an invaluable resource.

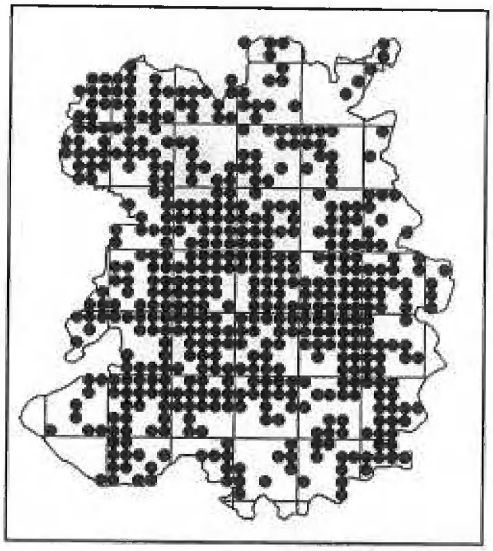
Until this time all biological records assumed roughly the same form: a location was always given (with varying degrees of accuracy), a species, and a recorder's name. Occasionally a determiner's name was given when the species in question was particularly difficult. However, this all changed at the beginning of the 20th century for two reasons. Firstly, there was a much greater number of recorders, and the amount of information received would have been impossible to print in full. Secondly, there was a recognised need to restrict new published records to significant new finds, so that endless duplication was avoided.

The solution that was adopted was to partition the county into 13 botanical divisions, based roughly on the major river catchments. The Caradoc Map was devised in the 1890s and was still in use as late as the 1970s. A fine colour plate is given in the Victoria County History Vol. 1 (Page 1908). In some ways it bears a striking resemblance to English Nature's Natural Areas Plan, which was published a hundred years later – another example of recurring trends, perhaps.

Although the reasons for the adoption of the Caradoc Map are entirely understandable, it had some unfortunate consequences. Species lists were prepared for each of the botanical districts but, without any detailed locations given, a lot of these records are now quite useless. Sometimes they cannot be localised to within 30 km and many of them are given with no recorder's name nor a date.

The crowning achievement of the Caradoc & Severn Valley Field Club was the preparation of a second full Flora of Shropshire, which was largely written by William Hamilton (1842-1910) but not completed before his death. The committee of the Club finished the preparation of the draft, the type was set, and they were ready to forge ahead with the printing when two things happened to stop the project. Firstly, they failed to raise the necessary subscriptions and then, secondly, the war intervened. Quite why it was never printed is a mystery, as the leader of the project and the chairman of the Club was the wealthy businessman James Cosmo Melvill (1845-1929), who had already been rich enough to publish his own *Flora of Harrow* while still at school in 1864. Perhaps our old acquaintances "sarcasm and trickful chicanery" had some part to play, but who may have been the villain we shall never know.

Hamilton's *Flora* was prepared along the same lines as Leighton's, with detailed localities for all but the commonest species. In the intervening years, however, the only existing copy has disappeared, no doubt reflecting the "woes of the world" that Leighton lamented. It was still with us in the 1980s when Charles Sinker extracted many of the records for use in his own *Flora*, but this is now the only source of these records – a situation reminiscent of the fate of Edward Williams's manuscript a century before. This illustrates the absolute imperative of publication.



Right: the accumulated records of the Caradoc & Severn Valley Field Club, spanning over 80 years of field work: 8,078 records are mapped, representing 1,476 species in 513 tetrads.

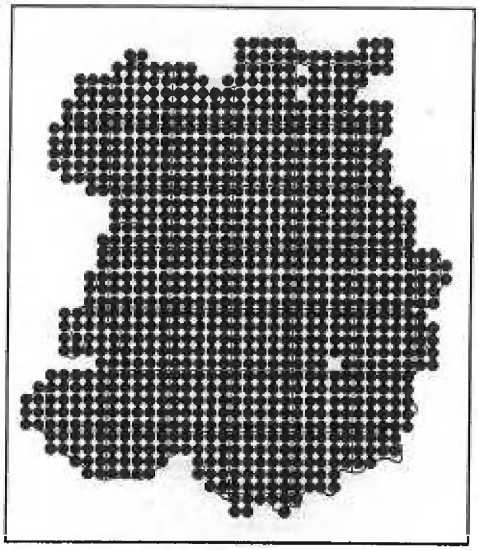
The most recent significant modernisation of the methods of biological recording came in the 1960s, when a number of circumstances brought about new motivations for the study of natural history. At about this time the Nature Conservancy was growing into an organisation that had a real presence within the county; meanwhile the Shropshire Conservation Trust and the Field Studies Council were both coming into being. Charles Sinker was influential in all three and, with the Caradoc & Severn Valley Field Club having been in decline for half a century or so, a new recording group was needed. Sinker made two radical changes to the way in which botanical records were made. Firstly, he adopted the squares of the Ordnance Survey national grid as the recording unit, removing for the first time the need for long and detailed descriptions of localities while retaining something of the accuracy of the pre-Caradoc records. Secondly, the emphasis was now on ecology and conservation rather than taxonomy. Conservation had long been of some interest to the old naturalists, and indeed it was more than half a century since George Potts had attempted to reintroduce Royal Fern, *Osmunda regalis*, to old sites that had been exploited by the Victorians, but ecology was certainly something new.

In some ways the Flora Group was simply continuing and refining the processes begun nearly 200 years earlier by Edward Williams. There is no doubt that Williams had tried to cover the whole county with his recording, and a remarkable effort was made; but Sinker planned to have even and comprehensive coverage of the county on a scale never before attempted. In practice, this necessitated a number of compromises. As the records were to be handled manually, a scale of importance was devised, whereby common species were recorded in much less detail than rare ones: 10km squares rather than 100m squares. This is a ratio 10,000:1, which demonstrates the efficiency of the method. In practice, most species were recorded to the level of the tetrad, 2km x 2km square, which is useful for mapping but rather unhelpful if you want to look for the original plant again.

Another disadvantage of the Flora Project is also a consequence of the scale of the task. Huge numbers of recorders were recruited and trained, and their records often lack either the name of the recorder or

any confirmation of the accuracy of the record. This is again a backward step from Leighton's *Flora*, in which the more dubious recorders are easily spotted. Finally, there is very little focus on the critical taxa, which is perhaps a consequence of the shift in fashion away from abstract taxonomy. On the whole, though, there is no doubt that the *Ecological Flora* was a tremendous accomplishment, even more so for its ecology than for its distribution maps.

A recurring theme throughout the history of botanical recording is the pendulum-swing of fashion and practicality. In each period there has been a focus on what is new, interesting and possible, and while this has brought benefits, there has usually been some sort of compromise. At the end of the 20th century we are not immune to these trends. Just as happened after Leighton and Hamilton, there was a loss of energy after Sinker's *Flora* appeared in 1985. In 1994 Shropshire was described as "data-deficient" by the BSBI in *Scarce Plants in Britain* and, in essence, this was fair, as most of our records by then were getting on for 20 years old.



Left: the coverage achieved during Charles Sinker's flora project, 1973-1984. Although 300 or so common species are excluded from the analysis, a total of 75,283 records are mapped in 977 tetrads, relating to 1,154 species. Note the three tetrads from which there are apparently no records at all – these are intensive agricultural areas with few public footpaths and very few uncommon species; the commoner species, of course, were only recorded by hectad, so they do not show on this map.

In recent years the impetus for recording has grown again, spurred on by initiatives such as the BSBI's *Atlas 2000* project, the interest generated by Clive Stace's *New Flora* and other identification guides, and by our own *Rare Plants* project and the draft *Checklist*.

In future recording is likely to be something of a synthesis of the various methods and interests of the past, with four factors coming together to make this an interesting time for biological recording:-

1. There is an upsurge of interest in the critical taxa, such as roses and dandelions, and the more difficult groups, such as the charophytes and bryophytes, which has been stimulated by the production of many new identification guides.
2. Ecology is by no means out of fashion, either, as the recent publication of the National Vegetation Classification has provided a framework within which to study this subject.
3. The advent of the personal computer has enabled us to simultaneously collect both detailed information and large numbers of records – a combination that was simply impossible in the days when the data were managed by hand.
4. Conservation now provides a widely accepted purpose for biological recording. There are dozens of nature reserves throughout the county, over 100 SSSIs, 700 County Wildlife Sites and many other areas of interest. For all of these there is funding and manpower but less often the scientific expertise to manage for conservation, so the skills of the naturalist are in unprecedented demand.

Although this is an innovative period for the study of natural history, some of the familiar trends of the past are still with us. The Natural Areas may well go the way of the Botanical Divisions, if good science is not applied to them; and there are serious debates about the best way to collect records. In recent years some of the most ambitious and costly recording projects have been marred by design faults which render the data useless. The Flora Group is by no means immune to mistakes – we have enough tetrad recording cards to last 50 years, but they are now made obsolete by the computer. In five years of answering enquiries we have never been asked what tetrad something is in, which illustrates that this is not a unit for field survey but should simply be a way of compiling records for mapping. Although it served well for Sinker's *Flora*, the tetrad system is now redundant and must be phased out.

Earlier this year the Flora Group held a recording day which explored the methods and ideas behind biological recording. This is a subject which we shall continue to experiment with, and the Flora Group intends to remain a field-based recording society above all else. The important thing will be to combine the three traditional types of recording – the even coverage of the distribution mappers; the site-specific records of the apothecaries and more latterly the conservationists; and the scattered discoveries of the taxonomists.

ILICINEAE

Ilex Aquifolium, L. 1, 3–5, 7–13

CELASTRINEAE

Euonymus europaeus, L. 2–5, 7–13

RHAMNEAE

Rhamnus catharticus, L. 2–5, 7–9, 11–13
— Frangula, L. 1–4, 7, 8, 11–13

Left: "bad" records in the *Victoria County History*. Not only are they unusable, they are also misleading: was Holly really absent from Divisions 2 and 6? Fortunately many of the records in the VCH give more detail than this.

The secret to a successful recording project is to make it interesting. Individual recorders can specialise in a particular area – whether taxonomic, ecological or geographical – and accomplish worthwhile studies. In this newsletter in recent years we have attempted to report on the range of such studies being undertaken at present, and there are clearly many other interesting lines of research available. In this issue there are reports of successful site management to restore populations of Frog Orchids and dozens of first county records by many people – not just trained botanists. The opportunities are literally endless, and there is worthwhile work for everyone, from beginners to experts.

If any members would like to discuss how, where and what to record, then please feel free to do so. We have a leaflet setting out some of the basic ideas of biological recording, which is available free to members.

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Frog Orchid Update

Ruth & Allan Dawes

At Craig Sychtyn...

Carefully controlled management work was carried out by Shropshire Wildlife Trust volunteers in the quarry (site A) in January 1998, involving cutting down scrub, strimming rank grasses and raking of thick moss to expose bare ground. A return to the previous grazing regime on this site would have been our ideal aim, but as it is tiny and not commercially viable the landowner had fenced it off and has no plans to reintroduce stock. We were delighted to count 12 flowering spikes this summer, the most since our monitoring began in 1990. The dormant plants must have been there all the time. We have to ask the question, did they flower because of our tentative, experimental management work or was it a particularly good year for Frog Orchids? By late summer the vegetation has already become quite substantial again. In the absence of grazing, strimming and raking will need to be performed annually.

Site B in the wood at Craig Sychtyn produced a nil return for the fourth year running. Site C by the footpath in the wood had one flowering spike in the usual place.

Six flowering spikes have appeared in a new colony in a shady area inside the reserve (site D), growing on otherwise bare ground which was cleared of trees and shrubs the previous winter. This bare ground was alongside a regularly walked path and is one of the few sites on the reserve where we have Greater Butterfly-orchid, *Platanthera chlorantha*. We feel confident that we would have seen the Frog Orchids if they had flowered in previous years and therefore assume that they must have been present in a dormant state and flowered in response to increased light levels. This would be consistent with a small colony (site B) which flourished after coppicing at the north end of the reserve, but faded away as the ground layer (dense Dog's-mercury, *Mercurialis perennis*) colonised the bare area.

Number of flowering spikes of *Coeloglossum viride* in various locations at Craig Sychtyn

	1991	1992	1993	1994	1995	1996	1997	1998
Site A	10	1	3	11	5	3	5	12
Site B	-	11	10	4	-	-	-	-
Site C	-	2	1	1	2	1	-	1
Site D	-	-	-	-	-	-	-	6

... and elsewhere

Conversely, at another privately owned quarry nearby which we have also been monitoring, numbers were down to seven this year. This is a site left to natural succession where no management takes place.

Last year we looked carefully at the growing conditions immediately surrounding all the known Shropshire plants and those in a flourishing colony of over 100 at a disused limestone quarry over the border. Initial observations show that there is usually a small area of bare soil surrounding each plant suggesting that germination occurs best on bare ground.

Two years' search of suitable habitats by various volunteers has produced nil return from Wenlock Edge.

Finally, the really good news. Jackie Pedlow found two plants in a new site on the edge of Llynlcys Common. Also, a request from Ian Trueman to visit an old garden site in Pant to check on records there produced a nil return amongst rank grasses and shading by sycamore, but brought about an introduction to caring owners of two species-rich old hay meadows, where we were delighted to find 30 flowering spikes, making this the biggest known colony in Shropshire. A welcome and timely reminder that however well you think you know your patch, always keep an open eye and an open mind as something good is sure to turn up.